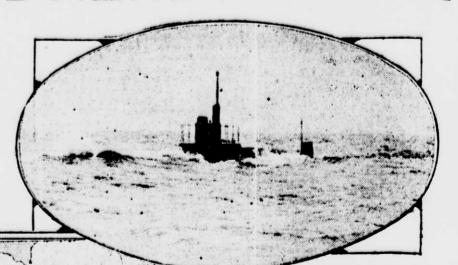
MOST FORMIDABLE FOE OF THE DREADNOUGHT

Giant Submarine Cruiser, Largest in the World, Designed for the Czar's Navy by Noted Russian Engineer - A Speedy 4,500 Ton Fighter Which Is Planned to Plant Mines as Well as to Fire Torpedoes



AMERICAN SUBMARINE NARWILAL, 340 TONS.

day of the submarine dreadought is approaching rapidly, naval officers say. Twelve years ago jast month the United States Government laid the foundation of the practical and commercial development of underwater navigation by buying the email submarine torpedo beat Holland, an experimental craft of 71 tens submerged displacement. A recent news item from Europe illustrates the great advance which has been made since then

Just picture, if you can, a submarine boat nearly sixty-one times the displace ment of the little Holland, and you will have an idea of the size of the underwater cruiser which it is proposed to add to the Czar's naw. The proposed submarine vessel is the outcome of the information which the Russian naval authorities have obtained in operating the various types of underwater boats which they have purchased from foreign constructors: but even so, a submarine of 4,500 tons is an immense advance over the biggest of the submersibles now under construction in France, and the French have been the feaders in the matter of eize. In fact, the largest of their sub-mersibles are a little over 800 tons sub-

The proposed cruiser is after the design of a noted Russian engineer, B. M. Schuroperate against a naval foe within the comparatively shallow waters of the Baltic. The boat is to be not only a submarine torpedo vessel ut also capable

While much credit is due Schuravieff for the ambitious scale upon which his craft is planned, still the original conception of a vessel of this general character is American. In 1905 Simon Lake, while in Europe and during the period of his successful negotiations with the Russian Admiralty, invented and developed on paper a submarine torpedo and mining vessel peculiarly fitted to meet the needs of the Czar's naval defence of the Baltic. Mr. Lake was inspired in his work by the realization of the advantage of submarine mines planted in secrecy.

The common practice is to sow these mines from surface vessels, and it requires many precautions in order to keep an enemy's spies from discovering at least approximately the location of the field. Apart from this there are weather conditions which hamper the work and which may make the operation even more hazardous than it is normally. Thus the Russian mine planter Yenisei drifted afoul of one of her own mines and was sent to the bottom with most of her crew early in 1904. It is true that served off Port Arthur contact mines which sank Admiral Makaroff's flagship. the Petropavlovsk, with more than 600 men of her officers and crew, but that sacrifice of life was the price paid by the Russians for their ant of alertness

An American's Incention.

to the effectiveness of these devices when they blew up one of their own vessels engaged in removing some of these avieff, and primarily she is intended to the submarine mine rather than the torguardians of the Dardanelles. It was pedo that did most of the under water damage to the contending ships in the Russo-Japanese war. The vessel designed by Mr. Lake has

of planting while under water a field of undoubtedly been the foundation and guide for the proposed Russian submarine cruiser. The Lake mine planting submarine was a craft of nearly 600 tons and was intended to carry a crew of about thirty persons. On the surface the boat was to make between ten and twelve knots and when entirely under the water she was to have a speed f seven or eight knots. The motive power was electrical when she was operating totally sub-

> Mr Lake thought that his mine a anter could perform its special wo when unning with only per sighting code; ontion show id apparently be no om any other bravire, and he eieved that a ter pant ng a ine o tiet mines and t en rising and running

at full spee! awa: from an enem culd decoy the 'e's ships into a p t of purs it which would take to m right over the hi den field t was strate y kindred fort by which the Japa e iced A imiral Makaroff out of Por Arthur and destroy this ship as he turned back

to harbor by his accust med toute

Mr. Lake planned that his c aft should mines. The mine pla tin o the vessel was marriy develorment distinctive feature of the Lake abmersibles, and this is in effect a diving ball forming an integral ; art o he craft

as the power of the submarine mine to do which are in e. min migrating, the midis concerned. It is a potent dle chamber being the planting room. means of dealing a blow to a trespassing from which the mines were to be dr pped enemy, and both Russia and Japan suf- outboard, while the adjoinin; son es seriously through this agency, were or the stowag, and the assembling several of their ships being sent to the of the loaded mines. Admissi n t and bottom through stumbling upon drifting from the planting room was by way of an



tained at the higher air pressure required lowers to accomplish a very material mounted upon surface torpedo vessels.

along a chosen line. The whole arrangeexpenditures at that time.

boat in Mr. Lake's plan is midships and she was designed to carry an effective tubes. In addition to this, the vessel was to have two quick firing guns mounted in her conning tower.

Russian Formidable Craft.

day the Turks supplied another example way only the central c. amber was main- has made it possible for his Russian fol- aside the projectiles from guns commonly only twelve years ago.

to keep the water out when the bottom advance in speed and in the factor of But the submarine cruiser is not merely hatchway to the sea was open. The safety. The Russian submarine cruiser to be passively defended. She is to carry a still better conception of the ambitious functioning of the planting room was not is intended to have a maximum sea speed a battery of rapid fire guns which are scale of this craft. unlike that of an uncorked bottle reed of twenty-six knots an hour, while at an to be housed within a steel clad tower. There is probably no record in the neck down into the water, air pesure economical cruising rate a radius of and so placed that they can command an preventing the water from rising within action of 18,000 knots is promised. While all round field of fire. It is safe to say so long a stride forward as is represented bove a crtain eight.

the vessel is primarily designed to supplement the Baltic mobile defences, still she
tagonist for the ordinary surface going battleship is quite as possible as the subthe installation of two launching hatches, would answer quite as well either in the torpedo boat. one on each side of the keel, so that mines Black Sea or upon the Pacific coast of The biggest submarine now building

ment was exceedingly ingenious. Un- ship is to be 1,000 tons greater than that this boat will have a displacement of his plans for the submarine cruiser or is fortunately for Mr. Lake, the declaration of her surface condition, and this means something like 500 tons and her total of peace called a halt in Russia's naval admitting and controlling a thousand length is 160 feet. This will give a good with which the next great naval war will tons of water in getting the boat in a idea of the big advance which the Rus- be waged? Twenty years ago, the sub-The Lake submarine mine planter was state to run submerged. The designer sians are making. The fastest American marine was considered an expression of The mine planti departme tof the also an under water torpedo boat, and recognizes that the handling of so much submarines have a surface speed of sub-inventors' folly. To-day the very Governwater ballast will take considerable time stantially fourteen knots and under water There is no room for argument so far consists of three airtight compared and ordinarily this would make the the best of them have made about eleven decade ago are liberally providing for their average submarine an easy prey for a knots. The Schuravieff craft is to do quick moving foe-such as a torpedo nearly twice as well on the surface and boat destroyer. In order to protect the to have a maximum speed submerged vessel from the attack of such craft during of fourteen knots an hour. The little the period of passing from the surface to Holland did something better than seven The improvement in the heavy oil under water trim, Engineer Schuravieff knots when running light upon the surengine, which was a decidedly uncertain gives his craft a defensive coat of process face and probably made between five

ing a total of 16,000 horse-power, will give

The submerged displacement of the vessel of Lake design. When submerged Schuravieff answering the question in he merely multiplying the fighting units ments which scoffed at submarines a electro contact mines. Only the other air lock from each st reroom, and in is quantity when Mr. Lake planned his boat, steel, which will be thick enough to turn and six knots submerged. This was

because the reach of modern ordnanos makes it possible for an enemy's battle. ship to lie nearly hidden below the horizon and yet bombard a seaport. The submarine must be able to intercept the dreadnought at just this sort of work and to drive her further seaward so that the coast may be safe from her attack. To do this the under water boat must be capable of holding her own when the wind plows hard and the waves roll deep and The splendid sengoing record of the Italian built submersible Hvalen in her run from Spezia to Stockholm stands as a convincing example of what an unescorted craft of this sort can do in the

SUBMARINE ABOUT TO DIVE.

hands of capable men. The Hvalen is a boat of only 185 tons in surface trim, and this is suggestive of what might be expected of a vessel of 4,500 tons dis-placement, such as the Schuravieff cruiser. While the underwater boat is steadily becoming a more serious menace to the

surface fighting ship and while each new

submarine seeks to avoid the weaknesse

of earlier craft, still these boats have elements of risk which are peculiar to the service for which they are designed There are some kinds of accidents which are not necessarily disastrous, but when submarine is sunk well nigh instantly like the French Pluviose and the British A3, death is virtually certain for all aboard. Collisions are the cause of the foundering of most surface shipping and in time of war most of the under water boats that sink will probably be sent to the bottom by being overrun either by friend or foe. Therefore any increase in size is pretty certain to multiply the loss of life for every accident of this char acter. However, this disquieting thought will never prove a deterrent in recruiting crews for under water craft Even though danger is always imminent, there

that slumbers in most real men. The public little knows of the many narrow escapes which mark the operation of submarine boats. Only the other day one of the big submarines of the United States navy was undergoing her deep water submergence trial in San Francisc Bay. She was required to go down to a depth of 200 feet for the purpose of test ing the strength of her hull. In a mood of bravado her crew volunteered to de the unusual thing, to go down inside of her instead of remaining at the surface

is a fascination about the service which

appeals to the primitive spirit of adventure

as has been the practice Everything went well during the func tion of sinking to the required depth, but there was a hair raising hitch when the time for returning to the surface arrived The boat had been drawn down by a cable attached to an anchor, and the cable boat was to return to the surface. Ther she was, anchored at the bottom, and there was no way to get out of her and to cut the connection with the anchor.

An hour passed in anxious suspen not only for the men inside of the boa but for the watchers above. Finally after desperate efforts, the jam was relieved and the cable ran free. It is said the big steel fish rose to the surface so speedily that she broached like a heaving whale This was all in the day's work Where the submarine was primarily and the men might have paid with their of the submarine began, but fortune

The WHITE PEACOCK half concealed under the foliage of a wil- thing very important has happened since

Continued from Eleventh Page.

create around him the atmosphere of harmony and beauty an artist needs in his daily life, without which his enthusiasm is chilled and his inspiration flags? No, she can never forget her own self long enough for that. She is one of those women who only think of themselves even in their married life. Nearly every girl is like that." He swore he would break his fetters.

On some evenings, yielding to Lucienne's influence, he gave himself up again entirely to his love for his art. The next morning he rushed back to the castle. One day in the forest she whispered standing very close to him:

"It's love only that makes life beauti-

As he drew nearer to her, trembling with desire and hope, her clear laugh rang Out.

This had lasted over a month. At the demanded again.

"I will come ba

end of July she told him she was soon to go away. I am going to visit a friend who spends her summers near Lyons."

This unexpected blow stunned him. 'Are you going away really?" he asked. "Certainly. To-morrow or the day lovers. after to-morrow.

"How long will you stay away?"

"A fortnight or so." "That's terribly long."

She expected words of love and smiled joyously at the thought of them. He uidn't speak, however. She tried to encourage him.

"If I can I will out my visit short. Will you think of our statue in my absence?" ever since the day when I told you "It is almost finished," he said. "I will I hated you. Do you remember?

think of it even more." She looked out of the window at the cloudless sky "Night is coming slowly. I love trese

long summer days Let's not work any more Can you row?" she asked. 'Of course I can People born on the thore of a lake can always row and swim." She clapped her hands with giee as "Take me to the island: we will Eather water iilies

Througa the orchard they reached the She pointed to a little pavilion

ow tree, saying: "The oars are in there."

Two rowboats were lied to the shore among the reeds. She showed him the smallest of the two, which bore her childhood name-Michelette. He drew in the painter, helped the girl into the boat and rowed toward the island He made a landing with some difficulty.

for the island was surrounded by a belt of reeds. Slowly they walked toward the little chapel that stood on it. Over the whole landscape descended the peaceful serenity of a day that is ending "It is getting late," she said.

Remembering her imminent departure he had a feeling that he was going to lose her forever. He took her hand and asked: Why must you go?"

"It's almost dinner time. You'll dine He shook his head. This

what he meant "Why must you go to-morrow?" he "I will come back," she answered con-

solingly. "We have been so happy."

"Yes, we have been happy." And with a bewitching smile she added. looking straight into his eyes, "Like two

She helped him the best she could to make his declaration. He came close to Michelle, that I love you."

She didn't move She didn't lower her smiling. Her nostrils were dilating. "I love you," he repeated with a more have it brought to the Combel so as to you can't remember that. You were such a tiny girl and yet your grandfather would the grounds. have given you the world. I only had my heart to give you."

> Bernard went regularly for a fortnight to see M. Lostange for news of Michelle. One day he found the old man jubilant. "She is coming back to-morrow," he explained. "I am the happiest of men."

"No, you can't understand that.

I can understand that," said the young man, whose eyes sparkled with joy.

"Something very important?" Bernard queried anxiously

M. Lostange never cared to keep secrete to himself. He lessened his worries by telling every one about them and by the same process increased the sum of his As he thought only of himself he fancied that his affairs would interest the whole world and it was with a ferocious self-complacency that he said to Bernard:

"Young girls are crazy. That broken engagement was a blow to all our relatives. It was sheer nonsense. It was a childish trick; it was preposterous. A girl doesn't throw over a man like Bussière-Galant. Fortunately Mms. Mansard-Loppe, who is a third cousin of ours and who had brought about the engagement, was kind enough to resume negotiations. The young people met again at her house, La Chataigneraie, near Lyons, and became reconciled. All's well that ends well. We are such good friends I thought I'd

tell you." Bernard received the news with the feeling that some one had struck him on the head with a club. He managed not to wines under the blow and answered

with a faint touch of impertinence. "I thank you, sir. I fully appreciate

your delicacy, believe me.' Night fell It became as dark outdoors her and very softly said: "You know, as it was in the studio. He was inhaling eagerly the perfumes of the garden which the night wind wafted to his nostrils. glance. She kept on looking at him and Suddenly he heard a noise like the pattering of rain on the leaves and an indefinite white shape alighted on the window sill. steady voice. "I think I have loved you He recognized the old peacock which enever since the day when I told you that joyed complete freedom at the Combel No, and which, probably disturbed by the hens in the coop, was wandering about

Bernard drove the bird away, as he had done once before in the forest. The peacock took his flight heavily, uttering frightened cries which rent the silence of the night. Just then Lucienne, walking with her crutches, entered the studio. The noise the peacock made had prevented him from hearing her.

She leaned her head against his shoultear fall on his fingers and this exagger Some- ated sympathy irritated him.

rving? "I feel hurt there." And she touched the joy he had felt at seeing his mother im over the heart. Then with a firm and sister again and all the promises the voice which contrasted with her anxiety springtime had then held out to his youth. she added: "You must go away. You He could not feel the same joy now as day he asked her the same questions and I will say yes. must go to-morrow."

Lucienne, suspecting Michelle's cruel play, made up her mind to free her brother from this abject thraldom and to give him back his normal life in which left now, she had be sought him in every she foresaw for him much happiness and

"You will leave, won't you, brother? It will be the best thing for you to do. "Why must I go?"

"Because she is coming back. "Well?"

"You mustn't see her any more." "Because she is engaged?" "Is she engaged?" He understood that he had given him-

elf away and added, "Yes, to M. Bussière-Galant's millions." They remained silent for a while. Then

"Don't be sorry, brother. If you married her you would suffer more som day than you are suffering now. It would be too late then.

"Don't speak of her any more, sister." "No. Bernard, I will not say another word about her.

"Let me carry you to your room." "No, I'll take your arm." "You are not heavy." And he lifted her s easily as a feather

"You are so strong, brother." "I wish I had your strength, dear little girl." And he kissed her tenderly. whispering in her ear, "I will go tomorrow. Are you happy now?" "Without seeing her?"

"Without seeing her." "I love you so, dear. I do so want to see you happy. I would give my poor wretched life to make you happy "Keep still, dear, foolish girl and sleep

He kept his word and left for Paris Lucienne, who was coughing a good deal, couldn't leave her room to see him off, but she was happy in her victory.

It was the last week in September. While climbing the path that leads to the for tenderness which the thought

marine cruiser. Therefore naval authorities well may ask what will be the form of for the United States Navy is the Seal, a the battleship of the future? Is Engineer

from Rome a few months before in May.

What would Lucienne think of his weak-

ness? From her sickbed, which she never

one of her letters to work, to achieve the

great things he had been planning and

especially not to leave Paris. He had

resolved to follow his sister's advice but

three messages he had received from

Michelle had made short work of his reso-

the terrible alteration in her features.

"I am glad you hurried, "she said.

"Mother, Lucienne looks so pale.

there any danger?" he asked:

"I will go with you "

meant for him

He found his mother sobbing in her

"She has declined very rapidly since you

is: she never complains. The doctor hasn't concealed the truth from me. As

soon as we can get her up we must take her

"It cheers her up so when you are here

It isn't very lively for her alone with me.

meant in his life. She had been the

chaste flame that lights an artist's steps

on his way to his destiny. With an un-

tiring devotion she had kept burning in

his soul the sacred fire which vestals

one of her feverish heart throbs had been

The darling, she cares so much for you.

He realized al! at once all Lucienne

But you know how courageous she

ne walked slowly up the hill.

felt a certain shame.

A Hair Raising Accident.

for harbor protection in the first days of lives for the venture, as so many others its recognition, it has been so developed have done since the modern development that it is expected to take its chances on the high sea. In fact it would have but was with them and an instructive lesson little of military value if it could not was learned.

The Holland had a single torpedo tube.

The Russian submarine cruiser, on the

other hand, is to be fitted with thirty

tubes for the launching of big Whitehead torpedoes and there is also to be a reserve

of one torpedo for each tube. The under

water cruiser stands in a class apart

from all other submarine craft. She

away from a base for many days at a

time, and with a radius of action of 1,400

knots at a speed of twenty sea miles an

hour she might easily meet an approach-

ing squadron where least expected, and

the outcome of such a meeting might

be of a disastrous nature to a force of

an enemy's dreadnoughts. But as if

not content with all this power to do

grave damage Engineer Schuravieff

equips his cruiser with a mine planting

installation by which the boat can launch

In order to handle this submarine

dreadnought efficiently she is to have a

crew of 300 persons. Perhaps to the lay

mind the fact that the boat is to have

ten sets of Diesel engines, each unit of six

cylinders, for surface propulsion, yield,

rapidly a long line of contact mines.

will be able to take the sea and to remain

"What is the matter? Why are you Combel, Bernard remembered his return dying nature exalts in man. He never crying, "No, you shall not leave me lik nentioned Lucienne's condition. She never spoke of her approaching marriage. She loved him, but couldn't bring She became affectionate and coaxing. She became affectionate and coaxing. mentioned Lucienne's condition. She "Dear, ask me nicely to be your wife and

> received the same answers: "What do you want of me. Michelle?" *Your love. I cannot live without it." out looking back "Marry me then."

"Am I not all yours?" "No. I want your life. Tell me that you are no longer engaged to that man." "What difference does it make?" "You don't love me."

And then she gave him her tips, saying: Why think of the future? Isn't today beautiful enough?"

The first one read: "Aren't you coming And he retraced his steps to the Combel The second: "Come to me"; the where Lucienne, weaker and weaker from third, "I love you and I am waiting for day to day, looked at him sadly and affec-

One day as Bernard was slipping out of Lucienne's words of welcome surprised the house Mme. de Saugeraie stopped him in the hall to say: "She is very low. I "I am so glad to see you. Did you "Yes, little sister." And then he noticed sacrament. have asked the priest to bring her the

"Mother, you are frightened without cause. She is sleeping peacefully. "Her breathing is so faint that I can hardly hear it. I am afraid." He took her in his arms and comforted

her.
"I will be back in an hour." he said.
Near the little lake Michelle was waiting for him. She wore a white gown and had draped a white scarf around her shoulders, for the sun was very low on the

shoulders, for the sal horizon.

"You are late, Bernard. I wanted to go over to the island with you," she said "I can't stay long to-day."

She retorted aggressively "I wou't

she retorica again the stope without exdetain you."
They walked up the stope without exchanging a word. At the turnstile Bernard stopped and as though expressing
a settled idea which has not to be explained said:
"Michelle, this cannot go on "
"What, our friendship?"
"You your engagement."

"What, our friendship?"
"No, your engagement."
"Why, aren't we happy?"
"This is unworthy of us both."
"Why don't you go, then?"
"You know I can't Michelle."
"Do as I wish you to do, then; it will be for the best. You have no will power."
Too sure of her fascination she had overstepped the mark. He stiffened up and opened the turnstile. Day after day he met Michelle in the oak forest and both relished keenly all the and opened the turnstile mellowness of autumn and felt the need

She rushed after him and held him back,

"I have asked you many times. You have refused. It is too late now." He pushed her away from him and fled with-

saw a priest in his white surplice pre-ceded by an altar boy. He was taking the last sacraments of the Church to Lucienne. Darkness fell on the forest and penetrated her heart, which was learning at last what suffering meant. She stepped off the path and knelt when the

priest passed.

Michelle, dressed in a dark gown, rang at the door of the Combel. Old Toinette came to the door with eyes red and swollen. Rustic and simple as she was, she had incritively understood many things and asked rather roughly:

"What do you wish?"

"May I see Mme. de Saugeraie?"

"Madame isn't at home to callers."

"Could I see my friend Lucienne?"

"Monsieur and madame are watching the body. They cannot be disturbed."

And the old woman relaxing from her hostile attitude broke into sobs.

"Poor Lucienne! When did it happen?"

asked Michelle.

"Yesterday at nightfall. She asked for

"Yesterday at nightfall. She asked for her brother. He wasn't there. Ta-priest hadn't come either." "Here are some flowers for her," said Michelle; the maid who was accompany-ing her carried a large bunch of chrys-anthemums. "I will send more of them.

pathy Toinette let Michelie into the parlor. After a while Bernard came in She made a motion as if to throw herself

Dearest, your wife is coming to grieve

He stopped her with a cold indifference which hurt more than a brutal gesture.

"My mother," he said, "wishes me to thank you for the flowers," and he was gone.

Under the bleak autumn sky Michelle was turning her steps toward La Saugeraie. The old white peacock, drazging the tatters of his unsightly train, crossel her path, and once more, nodding rider lously his head, tried to preen himsel and spread his tail, begging for admiration. Michelle in disgust shooed the sily bird away.